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Original communication

7208 Victims of domestic and public violence; an exploratory study based on the reports of assaulted individuals reporting to the police

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ABSTRACT

In this study, the data of 7208 victims (children and adults) of domestic and public violence were analysed after they reported this to the police in Amsterdam, the Netherlands. In this analysis the characteristics of these intentional injuries were collected and compared. Despite some significant differences, there is no clear, specific way to distinguish between public and domestic violence.

Therefore, it is more efficient for doctors to limit their focus to the differences between accidental and intentional injuries.

1. Introduction

As defined by the WHO, violence is the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, physiological harm, maldevelopment, or deprivation.

In the World report on violence and health (WRVH) it is described as interpersonal violence and is subdivided into family and intimate partner violence, and community violence. The former category (DV) includes child maltreatment, intimate partner violence and elder abuse, while the latter (PV) is broken down into acquaintance and stranger violence and includes youth violence, assault by strangers, violence related to property crimes and violence in workplaces and other institutions.[1] Not much has been written about public or community violence in the existing literature.

DV is increasingly recognised as a public health problem that can cause a lot of physical and psychological damage. More than 4 out of 10 women in the United States have experienced one or more forms of violence including child abuse (18%), physical assault (19%), rape (20%), and intimate partner violence (35%).[2] In addition, 2-3 million children and 1-2 million elderly Americans are abused yearly.[3] In the Netherlands, 45% of all adult inhabitants has been a victim of domestic violence at least once in their lives.[4] Possibly more than 118.000 children in the Netherlands are a victim of violence every year.[5] Violence between partners is also associated with significant physical and mental health consequences for both male and female victims and can lead to increased risk of poor health, depressive symptoms, substance use and developing a chronic disease, chronic mental illness and injury.[6] The incidence of IPV in women presenting to emergency departments in the United States has ranged from 14% to 41%.[7–10]

Identifying the signs of an abusive relationship is the first step to ending it. In medical trainings in the Netherlands little attention is paid to violence, abuse and assessment of injuries.[11] There are clear indications that service providers often do not recognise or discuss underlying violence issues.[12–15] Almost 75% of Dutch GP's reported experiencing barriers and/or limitations when identifying physical abuse.[16] Whilst efforts have been made to improve medical education on issues of violence,[17] it is reported that an average of only 3 h of medical school curricula are devoted to this topic.[18] Many female victims of DV visit their GP during the time of the violence

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but most do not talk about this out of shame.[19] However, questions about DV are not documented routinely by clinicians.[20] In addition, nowadays men too are recognised as victims of domestic violence[21–28] and there are indications that men experience similar types of physical abuse as female victims.[29–32]

The objective of our study is to acquire insight into the characteristics of intended abuse and injuries of children, males and females after DV and PV. Previous studies regarding the mechanisms of violence and the types of injuries of DV incidents focused predominantly on medical records of hospital admissions and emergency department presentation data. However, not every DV or PV victim needs medical help. We therefore focus on the analysis of police data to compare type of abuse, the location and the type of injuries of DV victims with those documented for victims of public violence. The aim is to help service providers to better differentiate injuries that may have occurred after DV versus PV. We hypothesize that DV incidents involve much more severe injuries overall than the PV incidents.

2. Methods

In the Netherlands, when a victim of physical violence notifies the police, an independent physician conducts an injury examination. In Amsterdam, this takes place during consultation hours at the Department of Forensic Medicine of the Public Health Service (GGD Amsterdam). During the examination, performed according to the guideline of the Dutch Forensic Medical Society, a forensic physician asks the victim for a brief statement (what happened i.e. how long ago, who the perpetrator was and the methods of infliction). Subsequently, the external lesions are examined and photographically documented, after which the physician determines whether the injuries found match the given statement. All these aspects of the examination are registered on a form, which is added to the police record as evidence for further judicial proceedings. The injury examinations are performed by a group of specifically educated and certified forensic physicians. These forensic physicians ($n = 11$) perform approximately 1400–1500 injury examinations annually. For each physician individually, this comes down to around 85 to 150 examinations in one year.

In this study we investigated the official reports of victims who attended the Department of Forensic Medicine between March 2005 and March 2010. In our department we investigate all victims of violence who are referred upon instructions of the Police after reporting the violence. The reports were structurally analysed by a single investigator (UJLR) and the following items were examined: 1) number of reported perpetrators 2) frequency of each type of violence reported by the DV population and the PV population and 3) frequency of each type of injury observed. Each of these outcome measures were analysed according to distinct age and gender subgroups. Furthermore, types of reported locations where the incident occurred (i.e at home or at a public place) and types of perpetrators (i.e. partner, friend, family) were examined. Two percent of the official injury reports (160 out of 7368) drawn up between 2005 and 2010 were excluded from further analyses due to missing data on several primary studies. These 160 excluded victims were registered in our database, but the injury reports were conducted at a different location (police stations) and had not been added to our database.

3. Statistical analysis

Descriptive statistics such as frequency distributions were used to summarize the data. A statistical analysis was performed with SPSS for Windows version 19.0 (SPSS Inc. Chicago, Illinois).

4. Results

Over the course of 5 years, 7208 victims attended our department. These victims consisted of 1839 DV victims and 5369 PV victims. The demographic characteristics are shown in Table 1. The DV population represents significantly more female victims than the PV population (85% vs. 31%, $p < 0.001$). No age difference was found between the two populations. Mean age of the DV victims was 33.0 ± 12.8 years versus 33.3 ± 13.7 years for the PV victims ($p = 0.7$).

The majority of the DV victims were abused in a private environment such as a residence (95%). Various locations of abuse were reported by the PV victims such as 'on the street' (54%), 'in the traffic' (11%), 'at public service companies' (9%) and 'other public places' (8%). Most reported type of perpetrator in the DV population is a (previous) partner (70%), whereas the remaining perpetrators appeared to be parents, siblings and other relatives. 96% of the DV population was attacked by a single perpetrator as compared to 73% of the PV population [Table 2]. In both the DV and PV population, adult female victims were more often attacked by a single perpetrator (99 and 86% respectively) as compared to victims of the other subgroups. Approximately 5% of minor DV victims and 4% of adult male DV victims were abused by two perpetrators. In the PV population several perpetrators were more common, especially among underage males (27%).

The most common type of violence appeared to be 'beaten/punched', ranging from 41% to 73% in the distinct DV and PV subgroups, followed by 'kicked' (14%–37%), and 'pushed to ground/object' (16%–29%) [Table 3]. However, DV victims appeared to be exposed to significantly more different types of violence than PV victims (2.0 ± 1.1 vs. 1.6 ± 0.8 different types of violence, $p < 0.001$). In addition, DV victims significantly more often reported to have been beaten or punched (70% vs. 59% in the PV population, $p < 0.001$), pushed to ground or an object (26% vs. 23%, $p = 0.009$), attempted strangulated (16% vs. 4%, $p < 0.001$), gripped or pinched (17% vs. 8%, $p < 0.001$) bitten (5% vs. 3% $p < 0.001$), pulled by the hair (10% vs. 4%, $p < 0.001$), burned (1% vs. 0.4%, $p < 0.001$) and raped (1% vs. 0.1%, $p < 0.001$) than the PV victims. On the other hand, PV victims more often mentioned a head-butt (3% vs. 2% in the DV population, $p = 0.01$) and were more often hit with an object (4% vs. 0.4%, $p < 0.001$).

92% of all injury assessments were completed within three days after the incident had occurred. The most frequently observed injuries by the forensic physician among the DV and PV victims were bruises (46%–67%), scrapes/abrasions (36%–51%) and swellings

Table 1
Demographic characteristics of the study population.

	Domestic violence victims	Public violence victims	Total population of victims
No. of cases	1839	5369	7208
Gender			
Male	261 (14%)	3615 (67%)	3876
Female	1566 (85%)	1688 (31%)	3254
Not documented	12 (1%)	66 (1%)	78
Age			
<18 yrs	138 (8%)	624 (12%)	762
18–24 yrs	436 (24%)	1186 (22%)	1622
25–34 yrs	514 (28%)	1345 (25%)	1859
35–44 yrs	436 (24%)	1050 (20%)	1486
45–54 yrs	211 (12%)	763 (14%)	974
55–64 yrs	67 (4%)	274 (5%)	341
65–74 yrs	19 (1%)	66 (1%)	85
≥75 yrs	11 (1%)	31 (1%)	42
Not documented	7 (1%)	30 (1%)	37

Table 2
Number of involved perpetrators reported by the different victim groups of public and domestic violence.

	Number of perpetrators								
	Domestic violence victims				Public violence victims				Total
	Males <18 yrs old	Males ≥ 18 yrs old	Females <18 yrs old	Females ≥ 18 yrs old	Males < 18 yrs old	Males ≥ 18 yrs old	Females < 18 yrs old	Females ≥ 18 yrs old	
Number of perpetrators									
1 Perpetrator	42	204	88	1452	291	2529	161	1256	6023
	95%	94%	95%	99%	72%	79%	75%	86%	85%
2 Perpetrators	2	9	5	10	31	213	18	101	389
	5%	4%	5%	1%	8%	7%	8%	7%	5%
3 Perpetrators	0	0	0	3	14	105	5	29	156
	.0%	.0%	.0%	.2%	3%	3%	2%	2%	2%
>3 Perpetrators	0	1	0	1	38	133	14	17	204
	.0%	.5%	.0%	.1%	9%	4%	7%	1%	3%
Number of perpetrators unknown	0	1	0	1	2	37	4	17	62
	.0%	.5%	.0%	.1%	.5%	1%	2%	1%	1%
Number of perpetrators unknown but > 1	0	1	0	1	26	182	13	49	272
	.0%	.5%	.0%	.1%	6%	6%	6%	3%	4%
Total	44	216	93	1468	402	3199	215	1469	7106
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

102 cases could not be divided in the age and gender subgroups due to missing data regarding gender and/or age.

(16%–31%) [Table 4]. Among DV victims slightly more different types of injuries were found as compared to PV victims (1.8 ± 1.0 vs. 1.7 ± 1.0 different types of injuries, $p = 0.027$). When comparing the frequency of injuries of DV and PV victims, differences were found in type of injury. DV victims more often showed bruises (63% vs. 50%, $p < 0.001$), swellings (29% vs. 26%, $p = 0.009$), red marks (18% vs. 13%, $p < 0.001$), burn marks (1% vs. 0.4%, $p < 0.001$) and bite marks (4% vs. 2%, $p < 0.001$). On the other hand, in PV victims, higher frequencies of lacerations (13% vs. 9%, $p < 0.001$), stab wounds (4% vs. 3% $p = 0.01$), fractures (5% vs. 2%, $p < 0.001$) and loss of teeth caused by violence (4% vs. 2%, $p < 0.001$) were shown.

5. Discussion

This study shows that the number of female victims is significantly higher in the DV group than in the PV group. It is possible that males do not report crimes as often as females. However, males form the majority of victims in the PV group. With DV, for both male and female victims the offender is almost always a previous or current partner (98%). Underage males and females are just as likely to be assaulted by their mother as by their father (71% vs. 81%). With PV the offender is usually a stranger; other than that offenders are neighbours, pupils or students, customers, road users and arrested people.

In both DV and PV the victim is usually assaulted by a single offender. An exception to that finding is formed by underage male victims, who are attacked by two or more offenders in more than 25% of all cases.

When it comes to the type of violence used, victims of DV are significantly more often beaten or punched, pushed to the ground or to an object, attempted strangulation, gripped or pinched, bitten, pulled by the hair, burned and raped than PV victims. By contrast, PV victims significantly more often report head-butts and blows with an object. For both groups of victims bruises, scrapes or abrasions and swellings are the most commonly seen injuries. Victims of DV show significantly more variance in types of injuries than victims of PV, but the difference is slight. However, DV victims do show significantly more bruises, swellings, redness, burn marks and bite marks; PV victims showed more lacerations, stab wounds, fractures and loss of teeth caused by violence.

Scientific literature too suggests that being beaten or punched is the most common type of violence; in about 30% of the time an object is used.[33,34] Attempted strangulation too is a frequently seen type of violence.[35–37,34] Although little is documented about biting and low percentages are ascribed to inflicting burn wounds and pulling hair in existing literature, these types of violence were seen frequently in this study. The prevalence of gunshot-, incised- and stab wounds found in this study is similar to the percentages mentioned in other studies, with variations between 0.5% and 2.5%.[38] The same applies to fractures.[39] Despite the fact that these percentages might seem low, it is still important to note and worrisome that victims in this study reported fractures 292 times, and incised- or stab wounds 280 times. This study describes 25 sexual offences. In Amsterdam, approximately 90 victims of sexual crimes are examined by forensic physicians annually. This group was not admitted to this study because the examinations took place at a different place than the aforementioned location (the police headquarter).

The aim of this study was to see if there are striking differences between the characteristics of DV and PV. This study shows that those differences are minor in nature. We recommend that clinical evaluation should focus on distinguishing between accidental and intentional injuries. However, we recognise that clinicians without forensic training find this very difficult. Half of all doctors questioned in a previous study indicated that they have not (sufficiently) been trained for this.[40] Even so, doctors without a forensic background ought to play a crucial part in recognizing intentional injuries. Every year, tens of millions of people are inflicted with injuries worldwide. These still go unnoticed by doctors too often,[9] even though about 60% of victims see their doctor at the time the violence is happening. Research shows that two third of victims does not bring up the subject to their practitioner themselves,[18] which makes it all the more important that doctors cut into the subject and question their patients about it. Even patients who are not victims and who are questioned mistakenly find it understandable and attentive that their doctor broaches the subject.[18,41] Moreover, in three quarters of all cases, making violence acceptable for conversation with victims lead to a stronger relation of trust.[42]

It is crucial that doctors ask themselves if injuries match the victims' statements. For example, injuries to the head, neck, throat and (side of the) countenance can indicate intentional injuries. Accidental injuries are often distal, whereas intentional injuries tend to be more proximal and central in the body.[43,34] Moreover, when a victim shows multiple injuries in different stages of the healing process this may point to intentional injuries.[44] Despite the fact that about 80% of victims shows injuries on visible places such

Table 3
Types of violence reported by the different victim groups of public and domestic violence.

	Domestic violence victims					Public violence victims					Total
	Males < 18 yrs old	Males ≥ 18 yrs old	Females < 18 yrs old	Females ≥ 18 yrs old	Total	Males < 18 yrs old	Males ≥ 18 yrs old	Females < 18 yrs old	Females ≥ 18 yrs old	Total	
No. of victims	44	216	93	1468	1839	402	3199	215	1469	5369	7208
Mean no. of different types of violence	1.6 ± 1.1	1.7 ± 0.9	2.0 ± 1.0	2.1 ± 1.1	2.0 ± 1.1	1.6 ± 0.8	1.5 ± 0.8	1.9 ± 1.0	1.7 ± 0.9	1.6 ± 0.8	
Beat/punch	18 (41%)	119 (55%)	60 (65%)	1072 (73%)	1282 (70%)	260 (65%)	1978 (62%)	126 (59%)	751 (51%)	3159 (59%)	4441
Kicked	6 (14%)	44 (20%)	19 (20%)	380 (26%)	457 (25%)	126 (31%)	728 (23%)	79 (37%)	335 (23%)	1282 (24%)	1739
Pushed to ground/object	8 (18%)	35 (16%)	26 (28%)	407 (27%)	483 (26%)	86 (21%)	666 (21%)	51 (24%)	428 (29%)	1248 (23%)	1731
Hit with object	12 (27%)	43 (20%)	20 (22%)	171 (12%)	246 (13%)	42 (10%)	434 (14%)	23 (11%)	144 (10%)	651 (12%)	897
Gripped/pinched	5 (11%)	14 (6%)	10 (11%)	278 (19%)	310 (17%)	25 (6%)	204 (6%)	16 (7%)	201 (14%)	451 (8%)	761
Attempt strangulation	4 (9%)	16 (7%)	14 (15%)	266 (18%)	302 (16%)	16 (4%)	129 (4%)	12 (6%)	76 (5%)	240 (4%)	542
Pulled hair	1 (2%)	4 (2%)	11 (12%)	170 (12%)	186 (10%)	3 (1%)	21 (1%)	41 (19%)	135 (9%)	203 (4%)	389
Cut/stabbed	1 (2%)	24 (11%)	4 (4%)	38 (3%)	67 (4%)	30 (7%)	159 (5%)	5 (2%)	39 (3%)	234 (4%)	301
Scratched	1 (2%)	29 (13%)	3 (3%)	45 (3%)	80 (4%)	9 (2%)	74 (2%)	19 (9%)	98 (7%)	206 (4%)	286
Bitten	2 (5%)	23 (11%)	7 (8%)	63 (4%)	96 (5%)	4 (1%)	118 (4%)	8 (4%)	28 (2%)	164 (3%)	260
Hit with an object	–	2 (1%)	–	6 (0.4%)	8 (0.4%)	19 (5%)	113 (4%)	7 (3%)	79 (5%)	221 (4%)	229
Head-butt	–	5 (2%)	3 (3%)	32 (2%)	41 (2%)	17 (4%)	141 (4%)	4 (2%)	20 (1%)	185 (3%)	226
Burned	1 (2%)	4 (2%)	2 (2%)	17 (1%)	25 (1%)	5 (1%)	10 (0.3%)	–	9 (1%)	24 (0.4%)	49
Tied up	–	–	1 (1%)	3 (0.2%)	4 (0.2%)	1 (0.2%)	17 (1%)	–	9 (1%)	28 (1%)	32
Raped	1 (2%)	–	5 (5%)	11 (1%)	17 (1%)	2 (0.4%)	2 (0.06%)	2 (1%)	1 (0.07%)	8 (0.1%)	25
Suffocated	–	–	–	6 (0.4%)	6 (0.3%)	–	1 (0.03%)	–	3 (0.2%)	4 (0.1%)	10
Other types of violence	5 (11%)	7 (3%)	4 (4%)	90 (6%)	107 (6%)	13 (3%)	104 (3%)	10 (5%)	86 (6%)	215 (4%)	322

102 cases could not be divided in the age and gender subgroups due to missing data regarding gender and/or age. Multiple types of violence were reported for some incidents.
Percentages in the table refer to the proportion within the corresponding subgroup.

Table 4
Types of injuries identified or detected by the forensic physician in the different victim groups of public and domestic violence.

	Domestic violence victims					Public violence victims				Total
	Males < 18 yrs old	Males ≥ 18 yrs old	Females < 18 yrs old	Females ≥ 18 yrs old	Total	Males < 18 yrs old	Males ≥ 18 yrs old	Females < 18 yrs old	Females ≥ 18 yrs old	Total	
No. of victims	44	216	93	1468	1839	402	3199	215	1469	5369	7208
Mean no. of different types of injuries	1.8 ± 1.0	1.8 ± 1.0	1.7 ± 1.0	1.8 ± 1.0	1.8 ± 1.0	1.7 ± 1.0	1.8 ± 1.1	1.6 ± 1.0	1.6 ± 1.0	1.7 ± 1.0	
Bruise(s)	24 (55%)	101 (47%)	43 (46%)	989 (67%)	1166 (63%	203 (51%)	1486 (47%)	117 (54%)	848 (58%)	2692 (50%)	3858
Scrape(s)/abrasion(s)	16 (36%)	110 (51%)	37 (40%)	577 (39%)	750 (41%)	155 (39%)	1435 (45%)	79 (37%)	584 (40%)	2292 (43%)	3042
Swelling(s)	10 (23%)	34 (16%)	26 (28%)	455 (31%)	528 (29%)	108 (27%)	838 (26%)	59 (27%)	344 (23%)	1374 (26%)	1902
Redness	14 (32%)	29 (13%)	19 (20%)	266 (18%)	330 (18%)	48 (12%)	430 (13%)	25 (12%)	181 (12%)	697 (13%)	1027
Lacerations	5 (11%)	38 (18%)	5 (5%)	111 (8%)	161 (9%)	39 (10%)	497 (16%)	10 (5%)	130 (9%)	684 (13%)	845
Soft tissue lesion(s)	–	9 (4%)	4 (4%)	62 (4%)	75 (4%)	24 (6%)	174 (5%)	9 (4%)	51 (3%)	262 (5%)	337
Fracture(s)	–	3 (1%)	–	32 (2%)	35 (2%)	22 (5%)	171 (5%)	13 (6%)	46 (3%)	257 (5%)	292
Cut(s)/stab wound(s)	1 (2%)	22 (10%)	4 (4%)	26 (2%)	53 (3%)	29 (7%)	162 (5%)	3 (1%)	32 (2%)	227 (4%)	280
Loss of teeth	–	10 (5%)	3 (3%)	26 (2%)	39 (2%)	10 (2%)	171 (5%)	5 (2%)	29 (2%)	219 (4%)	258
Bite wound(s)	1 (2%)	18 (8%)	7 (8%)	39 (3%)	66 (4%)	3 (1%)	82 (3%)	4 (2%)	19 (1%)	110 (2%)	176
Lip lesion(s) by teeth	–	4 (2%)	3 (3%)	18 (1%)	25 (1%)	2 (0.5%)	51 (2%)	4 (2%)	14 (1%)	72 (1%)	97
Burn mark(s)	1 (2%)	3 (1%)	2 (2%)	15 (1%)	22 (1%)	4 (1%)	9 (0.3%)	–	7 (0.5%)	20 (0.4%)	42
Other types of injuries	3 (7%)	16 (7%)	12 (13%)	64 (4%)	96 (5%)	18 (4%)	153 (5%)	14 (7%)	67 (5%)	253 (5%)	349
No visible injuries	1 (2%)	10 (5%)	8 (9%)	114 (8%)	136 (7%)	38 (9%)	301 (9%)	26 (12%)	157 (11%)	529 (10%)	665

102 cases could not be divided in the age and gender subgroups due to missing data regarding gender and/or age. Multiple injuries were reported for some incidents.
Percentages in the table refer to the proportion within the corresponding subgroup.

as the head[43,45,46] and back of the hand, 85% has injuries underneath their clothes as well.[43] For this reason it is important that the whole body is examined. Because forensic doctors are better capable to make judgements about the accidental or intentional nature of injuries, they should be consulted more often.[43] When it comes to male victims of domestic violence, police officers play a crucial role too, for they have to take this group of victims more seriously.[47]

Some limitations to this study should be noted. First of all, only victims that had reported the violence to the police were included in the study. Therefore, it is possible that victims with more severe injuries that required medical attention in a hospital, were left out of this research. On the other hand, results of studies conducted with victims that visited a hospital do not vary greatly from the results of this study.[48] Secondly, every type of injury a victim had was only scored once. Many victims, however, had the same type of injury multiple times on different parts of the body. That means that, quite frequently, victims' overall injuries were more serious than can be deduced from this study.

6. Conclusion

Regarding the intentional injuries, there are no unique, unambiguous and easily identifiable differences between DV and PV when it comes to the way injuries are inflicted and the types of injuries that occur. Doctors and other health-workers should limit their focus on differentiating between accidental and intentional injuries as described in the aforementioned discussion. Because violence is a serious public health problem, more effort should be put towards educating and training doctors to learn recognize intentional injuries and pick up signals that point to this kind of violence.

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